



## Sum and Difference Formulas

↓ Formulas ↓

Find the exact value of each of the following under the given conditions.

$$\cos \alpha = \frac{1}{\sqrt{5}}, 0 < \alpha < \frac{\pi}{2}$$

$$\sin \beta = -\frac{4}{5}, -\frac{\pi}{2} < \beta < 0$$

1  $\sin(\alpha + \beta)$

A  $\frac{2\sqrt{5}}{5}$

B  $-2$

C  $\frac{11\sqrt{5}}{25}$

D  $\frac{2\sqrt{5}}{25}$



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$$\cos \alpha = \frac{1}{\sqrt{5}}, 0 < \alpha < \frac{\pi}{2}$$

$$\sin \beta = -\frac{4}{5}, -\frac{\pi}{2} < \beta < 0$$

**2**  $\cos(\alpha + \beta)$

A  $\frac{2\sqrt{5}}{5}$

B  $-2$

C  $\frac{11\sqrt{5}}{25}$

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$$\sin \beta = -\frac{4}{5}, -\frac{\pi}{2} < \beta < 0$$

**3**  $\tan(\alpha - \beta)$

A  $\frac{2\sqrt{5}}{5}$

B  $-2$

C  $\frac{11\sqrt{5}}{25}$

D  $\frac{2\sqrt{5}}{25}$



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Establish the identity.

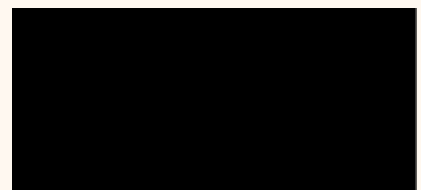
$$\cos (\pi - \theta) = -\cos \theta$$



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- 4 Enter your answer to question 11 from last nights homework.**





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Establish the identity.

$$\frac{\cos(\alpha + \beta)}{\cos(\alpha - \beta)} = \frac{1 - \tan \alpha \tan \beta}{1 + \tan \alpha \tan \beta}$$

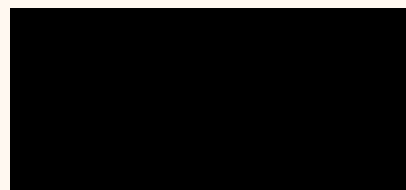


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- 5 Find the exact value of the expression.

$$\sin\left[\sin^{-1}\left(-\frac{4}{5}\right) - \tan^{-1}\left(\frac{3}{4}\right)\right]$$





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**Calculus** Show that the difference quotient for  $f(x) = \cos x$  is given by

$$\frac{f(x+h) - f(x)}{h}$$

$$\frac{\cos(x+h) - f(x)}{h} = -\sin x \bullet \frac{\sin(h)}{h} - \cos x \bullet \frac{1 - \cos(h)}{h}$$

hint: start on the left





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HW P. 489 # 29, 35, 39, 43, 47, 51, 55, 59, 61